Operator: The broadcast is now starting. All attendees are in listen-only mode.

Zach Abrams: Good afternoon, and welcome to today's webinar for members of the retail, food service, and grocery sector of the Better Buildings Alliance. My name's Zach Abrams. I'm an account manager for retail members, and our plan today is to provide you with an overview of the Better Buildings Alliance tools, resources, and activities that will help you to accelerate energy efficiency in your building's portfolio.

Before we get started there's a couple of housekeeping items. We're going to be saving questions for the end of the webinar, but we absolutely invite you to type those questions in anytime through the question pane in the webinar panel. Everyone is going to be muted as well. So, please anytime just feel free to ask away, and we'll get to those questions at the end.

We'll also be available to stay on a few minutes past the hour if needed to address those questions. Also, following the webinar, we're going to be sending the slide deck out, as well as a link to the recording to all participants, and Cara, if you don't mind, next slide here.

So, joining me to present today is my colleague, Cara Bastoni, food service and grocery account manager, along with Holly Carr, Better Building's sector lead at the Department of Energy, and Andy Mitchell, the technology solutions team lead from the Department of Energy. If you have any questions regarding the information we will review today, which is not addressed in the Q&A section in the end, please don't hesitate to reach out to Cara or myself or really anyone listed here on the slide. Next slide, Cara.

And we'll begin today with some exciting Better Buildings Alliance updates followed by an overview of the market solution – I'm sorry the technology team solution updates, and then the market solution team activities, and now I'd like to turn it over to Holly Carr to provide some programmatic updates from the Department of Energy.

Holly Carr: Thanks, Zach. Hello, everybody. Just want to note really quickly, as we through these slides you'll see that there are a number of hyperlinks and lots of URLs that you can click on, new resources we're going to be highlighting and so forth. Please know that we will be sending out a PDF version of this presentation immediately

following the webinar, so all of those hyperlinks will be active for you in that version that you receive by e-mail. You won't need to copy anything down if you don't want to today.

So, first just want to remind us where we all have come from. We first started working with Market Partners here at DoE in 2008 and the Better Buildings Alliance, previously known as the Commercial Building Energy Alliance I believe, and we've been growing and evolving ever since.

The Better Buildings Initiative as a whole is focused on 20 percent energy reductions by 2020, Better Buildings Challenge Program, as you know, focuses on 20 percent energy savings across the portfolio over a 10-year period, and in case you're wondering about what that might mean or how important those goals are across the country, down at the bottom there you can see that if we actually were able to cut energy use by 20 percent from current levels across the country in commercial buildings, we could save $80 billion annually on energy bills, not to mention reductions in greenhouse gases and increases in energy related jobs.

So, the work that we're doing through the Better Buildings Initiative is very important and can have great impacts. Next slide, please. So, we have a number of sectors represented in the Better Buildings Alliance, commercial real estate and hospitality, healthcare, higher education, and of course you all, our retail, food service and grocery partners.

Just as a reminder, our members in the Better Buildings Alliance have agreed to participate in at least one activity per year and to share their successes with us. We're really interested in understanding what you're doing that's working and trying to share that information out more broadly through DoE channels.

As you may, we have over 200 member organizations in the Better Buildings Alliance now, and over 10 billion square feet, or approximately 10 billion square feet of commercial building space across all of these sectors. Next slide, please. And although we've been working together for just a few years, we've already accomplished a lot as an alliance.

You can see a lot of those accomplishments in the numbers here on the slide. In particular, I want to call out that our Better Buildings Alliance members can participate in over 50 different activities related to energy savings. So, we've really tried to listen to our members, understand what the challenges are and take action to

provide opportunities for overcoming those challenges.

We've also increased our member activity this past year by 20 percent and have reported an annual energy savings from our members of more than two percent per year, so, great progress. Next slide, please. This is a listing of our current retail food service and grocery members.

Lots of familiar faces there, and of course those members who are underlined and bolded are also Better Buildings Challenge participants who have committed to 20 percent reduction in energy use across their entire building portfolio. We have 45 members in the retail food service and grocery sector over 2 and a half billion square feet of space. Next slide, please.

So, this slide gives kudos to our steering committee. We certainly want to than the folks who have stepped up to lead this sector and to put in a little extra time throughout the year to make sure that the work that we're doing in this sector really is valuable and on target for our members.

Kyle Wilkes from JC Penney is the chair of this steering committee, and I want to give him special thanks, and the rest of our committee members are noted here. Thanks very much. Next slide, please. So, speaking of the steering committee, these folks have gotten together a couple of times over the past few months to talk about what really is key and of most interest and value to this sector.

And we have two focus areas that the steering committee came to agreement on this year. One is around energy management information systems, and the other is around RTU replacements and retrofits, and not just RTU replacements and retrofits, but really planning those and being strategic about them, so in terms of engagements around these two topic areas there will be an energy management information systems webinar coming up December 9th from 2:00 to 3:00 pm Eastern Standard Time.

You can register for that either from this presentation, which will follow in your e-mail, or directly from the EMIS technology team web page and on the BBI website. Secondly, in terms of the RTU focus for this group, there's a business case for considering proactive RTU replacements, which is just about ready for primetime.

You should see that soon, and hopefully, that will provide

guidance to those of you who might be interested in participating in this, looking at proactively replacing RTU units on your locations where a much more efficient unit could be installed, and that would make financial sense to put it in before end of life or before you have an emergency replacement at that building.

So, this is kind of a guide to getting started and a guide to making the business case. We're also planning an RTU campaign webinar to give you an overview and some examples of other folks who've done this as well as a Walgreens case study. Walgreens has been very active in this proactive replacement program, and we're putting the finishing touches on a case study with them that will be available very shortly. Next slide, please.

So, this is just a reminder of all of the different teams that you can take advantage of as a member in the Better Buildings Alliance. All of these teams are headed up by an expert, either from our Better Buildings – I'm sorry, either from our National Labs, a scientist from National Labs or from one of our contracting firms that's an expert in this field.

So, I encourage you to check out these teams if you're not already participating, and you can certainly participating in one more than one. Andy and Deb Cloutier will be telling us a little bit more about these in a few moments. Next slide, please. So, the other way that we encourage our Better Buildings Alliance members to participate is to take advantage of some of the resources that have been developed by a Better Buildings Challenge Partners.

Mainly, these implementation models – implementation models are really meant to be replicable case studies of what some of our leaders in energy efficiency have done and found successful in helping them reach their portfolio-wide goal of 20 percent energy savings. So, just a couple of them are noted here in the, How Do I Pay For It category, Best Buy and Kohl's have both developed really nice succinct models for paying for energy upgrades in their buildings.

How Do I Engage Employees and Occupants and Customers, you can take a look at the Staples implementation model on their eco audits of their fulfillment centers, and finally you can take a look at Macy's implementation model which really looks at their real-time energy management system, and how they operationalize the data, the vast quantities of data that they get from that system to really do things with it and act on the data with their engineers out in the field.

You can check out all of the implementation models at the link at the bottom of the slide, organized both by company and also by challenge. Next slide, please. By the way, we certainly encourage our Better Buildings Alliance members, if you do use one of these implementation models as inspiration for work that you're doing in your own organization, let us know. We'd like to know when those things are being replicated by other folks.

Also want to call out here a recent change for our food service Better Buildings Alliance Members. I think most of you know about this, but we have been in conversation with many of you these past several months about a subtle change to the Better Buildings Challenge program, which would allow food service partners to track energy use with us on a kBTU per transaction basis rather than the kBTU per square foot metric that our challenge partners currently use.

And this is just in recognition of the fact that food service establishments are unique, and that they in some ways function more like little plants, manufacturing plants than they do like commercial office buildings, and so we hope that this move to allow food service organizations to track by transaction will encourage folks to consider the Better Buildings Challenge and to make a public goal of 20 percent savings across the portfolio.

If you have any additional questions about that, feel free to reach out to me directly where we also have an FAQ document on our website at the address listed on the side. Next slide, please. And less we forget, our webinar series, which is growing strong this year, this series is always held on the first Tuesday of the month and features our Better Buildings Alliance challenge partners, alliance members, and also organizations who are working with us toward the same goal of energy efficiency in buildings.

So, this December webinar takes place on December 2nd, 3:00 to 4:00 pm and looks at innovative ways that some of our Better Buildings Challenge partners are working with utilities to make their energy efficiency dreams come true. We will have Whole Foods Market as well as City of Houston, and General Motors all in one, one-hour webinar talking about their unique strategies for utility collaboration. Hope you will join us for that on the 2nd.

All of the webinars in addition are archived on the Better Buildings' website, so you can go back and listen to other sessions that might be of particular interest to you. Next slide, please. And

we also offer in-person educational opportunities, primarily through our Better Buildings Summit, which takes place each spring.

This year it will be in Washington, DC, May 27th through the 29th at the Wardman Marriott just north of Dupont Circle where we held it last year. We hope everyone listening will check into that and perhaps join us for the summit. Lots and lots of sessions over two and a half days. Lots of partners talking with each other and sharing their own solutions with one another and a great opportunity for peer networking. Next slide, please.

Of course we encourage folks to check out just the plethora of resources on the Better Buildings Alliance website. Under each technology team there are many resources that have been selected as particularly relevant to your sector. Many of the resources that Andy will be discussing as he covers some of the recent technology teamwork. Those resource are highlighted on the Better Buildings Alliance website and easy for you to access, so check those out as well. Next slide, please.

If you're not already a Better Buildings Alliance member, and you are on this webinar today, we certainly hope you will consider signing up, participation is free, and you can sign up directly from the link on this slide or head straight to the Better Buildings Alliance website, and there's a sign-up form right on the front page.

Feel free to contact me at the address at the bottom there if you are interested in stepping up to the Better Buildings Challenge. We are always happy to welcome new folks into the challenge. Next slide. And we would be remiss if we did not participate fully in social media, and we actually have a great new opportunity to stay connected with the Better Buildings Program through our LinkedIn presence.

You can click right here on this slide to join our LinkedIn group, which provides you with just easy access to the latest updates from the technology teams, allows you to sort of mix and mingle with other folks in the Better Buildings Alliance. It's a nice way to post a note and say, "Hey, is anyone heading to Green Build from the Better Buildings Program. We might want to touch base at the conference."

So, we hope that you will join us on our LinkedIn presence. You can always follow us on Twitter, if you haven't already, and I think

we have a subtle shout out to Gunderson Health who just announced their achievement of energy independence this week, and then we amplified that on our Twitter account. Facebook as well as Twitter, both way that you can reach us, and you can also sign up for the bulletin, which comes out about every two months through the link at the bottom of this slide. Next slide, please.

And finally, just a note about a few of the conferences that we are planning to attend this year and we hope that we might be able to catch up with you at some of these. We've, of course, highlighted our Better Buildings Summit in May, but these are some of the key conferences coming up in your sector that we know of in the near future, and we hope to connect with you there.

So, with that, I'm going to turn the mic over to Andy Mitchell, who will provide us with an overview of what the tech teams have been up to this year as well as our technology demo program. Andy.

Andrew Mitchell: Thanks a lot, Holly. Can you hear me okay?

Holly Carr: Yes, I can.

Andrew Mitchell: Great. So, as Holly said, we're going to take a look at the technical side of the work we do on the Better Buildings Alliance. The role the tech teams, as we see it and as the direction we've gotten from our members, is to synthesize that whole wide world of technology that's out there and make those innovations usable and make the information usable for the BBA members and their peers.

And we know that the members of the BBA, generally speaking, are already leaders in energy efficiency and energy technology, but we also know that you all do set the pace for the nation when your stores institute these technologies, other stores notice, and making those resources, those technical resources available via the BBA will allow the country as a whole to institute these technologies much faster.

As a result there's less money spent on energy, there's more money available to hire people to work and less smoke in the air, so that's sort of the high-level motivation behind the tech teams, and really for the whole BBA in general. There's a lot of technical progress going on and a lot of opportunity to implement energy efficiency measures.

One thing we hear a lot from members is that prior to joining the alliance, really the primary source of information they get is from

sales reps, and those sales reps and those private companies definitely play a central role in the deployment of new technology, they're critical.

But as an example, as a simplified example, if you ask a hammer salesman to recommend a tool, the hammer salesman's going to recommend a hammer. So, what we try to do as the BBA tech teams is provide an objective source of information and that information doesn't just come from us, it comes from peer to peer learning.

We've had incredible amount of knowledge shared from our different members with each other, and we also augment that with expertise from our tech team leads and other resources. The technologies that we decide to address in the tech teams are determined by input from BBA members. It's what you, as the members, want to hear about.

It's also determined by our own prioritization of high-impact technologies, so we do use database decision-making to identify the most important technologies for us to focus on as a nation. And then finally, we do collaborate with opportunities with our partners, and I'll get to that in a second.

Overall, there is eight tech teams, we separate them by category and by industry, and each of the teams is led by a subject matter expert, either from one of our national labs or a consultant from Navigant Consulting. So, I'm going to go to the next slide, Slide 20, and another component of what we do –

So, in addition to the tech teams, alliance members will step up and demonstrate new innovative energy saving technologies to real building demonstrations. These tech demos are an opportunity to try viable market-ready cost-saving technology. Those are the three important criteria, and they work directly with manufacturers, Department of Energy and national experts.

So, basically, if you're ready to try one of these technologies, you can do so with assistance. The tech demos provide members a chance to achieve that next generation of energy savings. They also get recognition for being innovative in their approach to energy reduction, and they get third party expertise.

So, we are really looking for sites for these three tech demos you see posted up on the screen now. These are coming up in the next year. I'll just go through them real quick. The first one enVerid

HVAC load reduction, this is going to probably work out really well in commercial real estate and retail. It originally grew from a carbon sequestration project.

It's a demonstration, the technology will address air recirculation in buildings, so it takes advantage of a membrane technology that reduces the amount of outside air and HVA system needs to condition while still maintain the air standards. It's pretty straightforward, any HVAC system is pulling a little bit of outside air in at all times, and when it does that, that system has to either heat or cool the air.

If you can reduce the amount of outside air that's being brought in, but still make that air fresh, you will reduce the energy needed. So, that membrane removes volatile organic compounds and carbon dioxide, so the recirculated air is fresh, and in preliminary demonstrations is has showed 20 percent reduction in cooling energy savings, so something to keep in mind.

Next, Tech Demo Building IQ Predictive Energy Optimization. This is an energy management information system technology, basically analyzes power savings and it's a predictive model to account for weather info, occupancy, things like that. It's a database solution to reducing energy.

It is most applicable to facilities over 100,000 square feet, so pretty big, but certainly would work well in, like a large indoor mall or other similar applications. The last one here, the A.O. Smith micro combined heat and power. Combined heat and power, CHP is usually this technology that's only reserved for massive facilities like hospital campuses or universities.

But, like all things in this life, they're getting smaller and they're getting to a point where combined heat and power facilities or devices are available for smaller applications. Basically, what it does is it heats water and creates energy at the same time. So, for these miniature or micro CHPs, what we're probably looking for, a full service restaurant, something with a substantial amount of water demand, 3,000 gallons a day of hot water and regionally located northeast, Midwest or California.

Okay, next slide. Just putting out a save the date for upcoming tech demo program, we're going to focus on envelope retrofits. So, this is exactly – that's just a save the date. Please consider joining us this spring in the Smoky Mountains. DoE's going to host a workshop, the intent is to bring together building professionals

with envelope stakeholders, and when we say envelope we mean technologies with windows, walls, insulation, roofing retrofits.

Envelope technology is currently underutilized, and they're in need of more developments so we can drive down cost and ease installation. So, we want to get your perspective so we can move toward real world solutions that can be cost-effectively installed. Please consider joining us, and watch for more info on that.

Okay, so what I want to do now is move into the tech teams. The first one is probably appropriate that we focus on lighting and electrical. Lighting is a high profile and high value energy efficiency measure. It makes a first impression and a lasting impression and we all sit in rooms all day that are lit. So, it matters to everyone.

I can also say that, and I'm sure a lot of you on the call can relate to this as energy professionals, we do use the lights that we see when we walk into a facility kind of as an indicator. Like almost like a canary in a coal mine. You walk in and you look up at the lights in the lobby or the front hall or something like that, and if you're seeing things like T12 linear fluorescents that's a pretty good indicator that facility or that organization doesn't have a very sophisticated energy program, energy management program in place. So, we use that as an indicator, informally.

Anyway, that just expresses the importance of quality lighting. The primary focus for the lighting and electric team for the last year has been the LEEP campaign, Lighting, Energy Efficiency and Parking. It's been highly successful. The goal is to influence the uptake of lighting and energy efficiency and parking, basically retrofitting parking areas, so that's lots and structures with LEDs and/or controls or efficient fluorescents or incandescent or say other types of lights.

So, the graph on the top right there, it's kind of small, but it doesn't really matter 'cause you can pretty clearly see on that graph the trends that the LEEP campaign has demonstrated. It's going very clearly up and to the right. It just has really blasted off in the last year with some pretty high profile members joining the LEEP campaign.

So, basically, the goal of the campaign was to bring in 500 million square feet by March of '15, and we're well on our way there. We're almost definitely going to surpass that. We also use the LEEP campaign to recognize organizations for leading the way.

We did that at the April 2014 FMA conference. Mentioned there that some of the energy savings can be as high as 90 percent.

That 90 percent reduction almost always comes from a combination of technology and controls, the projects that take full advantage of both. When we say controls, we're talking about things like occupancy sensors, daylight sensors, anything that can help reduce the use of lighting when it's not needed.

So, the award winners, they haven't used LEDs exclusively. Big savings also come from controls and a lot of different approaches including fluorescents and induction technology. Just like all these technologies that we use, having a widget and installing it can only get you so far. The controls are a major part of that, the behavior that goes with it is a major part of that.

Michael Mowry is one of the technicians that works on the lighting campaign. He says that the equipment can really only get us so far, so you can have the nicest lights in your city, but if they're always on that's still a waste. Moving on, there are current activities updatings to BBA lighting specifications are underway.

We're updating specs for the BBA parking resources to reflect new recommendations and to make improvements based on what we've been learning through the LEEP campaign, so for example, many sites are far exceeding the minimum levels that were initially required, so we're looking at raising the bar.

You can provide your input to Linda Sandahl, Linda is the technical team lead for lighting based out of Portland, Oregon, and her e-mail is at the top of the screen. Okay, upcoming opportunities, what we want to do is build off of the success of the LEEP campaign, and roll that into the interior lighting campaign, which will be launched in March of this year.

The ILC, it's the latest Better Building lighting initiative. It's designed to help facility owners and managers save energy and money by adopting high-efficiency troffer lighting solutions, it's similar to LEEP in design. It's a recognition and guidance program to help owners and managers take advantage of savings opportunities specifically with troffer lighting.

The reason we focused on troffer, over half of all commercial fluorescent lighting fixtures are recessed troffers, one by fours, two by twos, two by fours and by adopting performance levels recommended by ILC, this program, building owners can save up

to 50 percent in their troffer lighting costs, and even more when controls are used also.

There's a lot of really impressive new technologies out there. Lights, LEDs in particular that can last up to 100,000 hours. In some cases they're going to last longer than the building that they're installed in. Upcoming webinar, this is sort of off the ILC, upcoming webinar on December 4th will focus on next generation luminaires, indoor design competition winners, and lessons learned for building managers. That December 4th webinar is posted on the BBA events calendar.

We'll also have a conference call on December 11th to discuss elements of the BBA model technical specifications for the high efficiency troffers, and that's about it for lighting. We'll go onto Slide 23, the Space Conditioning Team. This team is led by Michael Deru. Michael is at the National Renewable Energy Lab in Golden, Colorado, right outside Denver.

When we look at the 2014 highlights, we really do focus on the advanced RTU campaign, advanced rooftop unit campaign, or ARC as we sometimes call it, and this rooftop units is a sector focus area, so this is something for this group to focus on. Unfortunately, unlike lighting, rooftop units don't light up, they don't welcome people into the building, it's one of those things that when a rooftop unit is working appropriately no one would notice it at all, so it's a little bit more difficult to get recognition for that.

So, part of the goal of the RTU campaign it to facilitate that recognition, and it's been going really well. So far we've saved – I should say we've helped our participants save over $33 million annually, and that again is money that can be rolled back into the US economy and all the facilities that are running these RTUs.

In terms of application to retail, just yesterday the ARC campaign had a webinar that featured Kirk Beaudoin from Adidas. Kirk gave a really good overview on the process that they went through at Adidas with their RTU replacement process, and he gave some really interesting color.

His own motivation why he got involved in it and some of the challenges and success working internally at Adidas. I'm sure a lot of people on the call are in large organizations and need to promote that. Kirk made a really good case for replacing RTUs before they fail.

Holly recommended that proactive replacement guide. Walgreens has a case study on proactive replacement that's available on this New Resources link, and there is a great case study from Adidas on their experience as well, and those are all available if you click on that New Resources hyperlink, which you'll have access to when this is send out as a PDF.

I should point out also that the RTU campaign has its own independent website. That's appropriate. The Department of Energy is a supporter and organizer and a driver of the campaign, but it is a joint effort, so you can see the URL there, advancedrtu.org, pretty straightforward.

Current activities and other resources, RTU campaign's going through 2015, so it's not too late to sign up, definitely consider that. Nominations for first annual campaign awards and other recognition will be announced in January. Again, it's important to recognize those facilities that are leading the way because other people might not notice those RTUs, and they use such a tremendous amount of energy, it's a great opportunity.

Two other products to point out, there be work done. Practice guide for RTU installed performance estimation. This helps estimate the performance of older installed RTUs and make a case for the proactive replacement, and then finally, an HVA system and resource map. That'll be a great primer for anyone involved in facilities or financial management facilities that's considering an RTU replacement.

Go to the next slide, Slide 24 and take a look at some upcoming opportunities here. An early warning for the peer exchange for energy savings opportunity for ventilation setbacks for healthcare, more to follow on that, and probably more applicable to the healthcare sector.

Two technical guides coming are way that could really very much change the way that HVAC is installed and operated, the Optimal Air System Control Sequence and the Ventilation Best Practice Guide for Retail. The first one focuses on air system control sequence, so picture large facilities with hundreds of air handlers and optimizing the way those work together. Ashrae will be involved in that.

The second one, ventilation – oh, sorry. I'm going to hold off on that. The takeaway from the optimal air system control sequence is that Ashrae, this group of engineers is going to make this

document and it's going to be complicated. It's going to be heavy, it's going to be very specific and I for one am very grateful to have Dr. Deru to help translate that for us. So, that'll be an upcoming opportunity for everyone once that guide is out to have that broken down to my level.

Next up, Ventilation Best Practice Guide for Retail. Definitely a document of interest to all retailers. Balancing indoor air requirement with energy optimization, different optimization for different settings, so obviously office and schools are going to have different air circulation needs than retail.

Retail has different air contaminants, different concerns than other applications. Any business that sells furniture, clothing, or anything with fabric in it that will experience off-casting is going to appreciate this document. Lastly, for space conditioning there are two tech demo opportunities that I mentioned earlier and we are seeking sites for those. So, please do consider.

Okay, Plug and Process Load Team, Slide 25. Few highlights from 2014 completed a plug load study in healthcare, we worked with Massachusetts General Hospital and SUNY Upstate Medical University and demonstrated savings potential in nighttime idle modes.

So, we talk about plug and process loads, one way that I like to think about this – or it was explained to me this way, what are plug and process loads? If you pick up a building, if you are a giant, and you pick up a building, and you shake everything out of there that's not connected to that building, what you're going to shake out are the plug and process loads.

So, it's anything with a plug on it. It's your computer in many cases, your telephone, fans, lights, all the things that are plugged in on many of our desks right now, and the plug and process load team, or PPL as we often call them, did a plug load study in healthcare, and they have also delivered advanced power strip technical specifications to DoE.

So those APSs, those are the strips that we plug everything into our computer on, and those are going to build off of the results of that healthcare study and help reduce the vampire loads, or those idle modes that a lot of our devices are working on. So, that's a major focus of the plug and process load team. They put out some publications this year, again, those links will be live on the PDF version of this, so you can certainly look into those later.

I'm on the next slide, Slide 26, Current Activities. Basically moving with the promotion of advanced power strips, so we'll work with NREL, we'll work with building owners, manufacturers, potentially utilities to promote advanced power strips. And this is NREL here, it really is the Better Buildings Alliance tech team, which is based out of the National Renewable Energy lab and head by Rois Langner. They will be developing a how-to guide for installing these advanced power strips.

A good opportunity here to promote the upcoming project team call, next quarterly call is scheduled for December 3rd, just in a few weeks. That'll be posted on the BBA events calendar, or you can certainly contact Rois Langner to join. Her e-mail is up at the top.

In terms of plans for the future, the most exciting thing I think about the plug and process load team is, they're reorganizing all of the information available on this topic on the website, so keep an eye on that, all that information will be available sort of as a collated central location and other upcoming things, at least that I'm excited about, I'm excited about all these, but the PPL team will be conducting a gap analysis, so they're going to look for once they have those resources collated and on our website, we'll be looking for anything missing from the existing resources to identify needed PPL resources that would support the BBA members.

We'll move on to Slide 27, this is the EMIS team, Energy Management Information Systems. Basically, data management for your facilities. Another sector focus area, so this title at least, EMIS team, should have a few exclamation points after it to get the appropriate attention here.

In terms of 2014 highlights from the EMIS team – oh, I should say the EMIS team is led by Dr. Jessica Granderson, Lawrence Berkley National Lab in California, and her contact info's at the top of the slide there. 2014 highlights, basically for the EMIS team, 2014 was a lot about getting members all on the same page about what energy management information system means, basically level the field so that we can focus in 2015 on more nuanced elements of what it means to be in EMIS.

So, basically, this collection of resources is intended to create a common frame of understanding to the extent that's possible. So, just taking a look at some of these resources that are linked there,

definitely recommend taking a look at the webinar materials for the crash course to understand critical aspects of successful EMIS use.

Basically, this includes six high-level steps sort of establishing a more intentional process to selecting, adopting and implementing and took a look at the broad level cost and savings. It's a great starting point, if you're interested in bringing an EMIS system into your facility that's a great place to start.

Next on that list there, similar to PPL, synthesis of existing EMIS resources, so basically like a clearing house, and then a regional guide to EMIS that's an activity that everyone can do to go ahead and take a look and see what regional advantages you might have working with EMIS.

Another highlight of the EMIS team during their calls was they're actually demonstrated various EMIS systems with vendors, and that's going back to the idea that vendors and sales reps have a lot of input to share, the EMIS team embraced that, invited those companies to demonstrate their products, but to do so in an objective environment.

All those products were selected according to member interest, the ability to be demonstrated in that setting and criteria for capabilities. Last point here recounts that the team has been tracking member participation in successes, failures, challenges, all that. All the members of the team have been pretty active and actually looking for ways to maximize values of their EMIS systems.

A few all-stars, the federal government, ESA, Whole Foods, the County of Kauai in Hawaii, and Wendy's restaurants. Okay, I'm looking at Slide 38. The EMIS team upcoming current activities, big webinar coming up on December 7th. That'll be a joint with retail and food service, so hopefully that's on all of your calendars. That'll be a good starting point for this sector emphasis that we have moving forward for this year.

Plans for the Future, basically the idea is to take what we've created as a base in 2014 and drill down a little bit deeper into what the advantages of EMIS is. The last point on Plans for the Future there, we want to create a primer on holistic organizations, so not just having data for data's sake, but for reducing bills, but for incorporating into the overall organizational strategy of a building or a campus or a set of buildings or a business group of restaurants using that data to help guide activities.

Lastly, Upcoming Opportunities, we mentioned the tech demo opportunity with Building IQ for facilities over 100,000 square feet.

Okay, Renewable Integration Team, the big 2014 highlight – I'm sorry, I'm looking at Slide 29. The big 2014 highlight is the solar decision guide, this was developed to – basically, it's a comprehensive resource for installing solar panels at your facility. Moving forward on that, the plan is to break that into sector-specific guides, so certainly for retail and food service we would have smaller and more accessible guides for that renewable.

Let's see, another really important activity that we're working to develop is a leasing guide. This is similar to something that Deb will tell us about in a minute. The leasing guide to address split incentives, so working with market solutions team to identify ways that facilities that aren't owned by that tenant, can still consider installing solar. So, next team meeting is on Tuesday, December 2nd, and we are looking for members to provide case studies, not just for the team meeting, but for basically any experience you have in general.

In particular, anyone who has experience with installing solar panels on rooftops and how that affected rooftop maintenance. That's something that's been expressed as a concern, and that's something we want to address. As far as plans for the future go, we're focused on these sector-specific guides, and we're actually pretty open to input, so come spring we have an opening for any input from BBA members.

Let's go to Slide 30, Food Service Technology Team, and Holly mentioned this in the interest, so I won't repeat it, but the Energy Star survey results that are being used to incorporate an Energy Star rating for food service restaurants. It could be as long as 2016 before Energy Star rating for food – for restaurants is available, so just want to kind of manage expectations on that.

Holly mentioned that we are seeking food service and restaurants for BBC, so if anyone on this call is interested in stepping up to that challenge, we would appreciate it. Some challenges exist, but there are solutions in place to address those corporate versus franchise controls, so that's something that will be addressing ongoing.

Let's go to Slide 31, The Refrigeration Team, saving energy in

supermarkets is challenging, and there's really no industry accepted performance metric. There's a broad range of design and field directed systems in place, but those complex systems are in interactive effects with HVAC and lighting. So, the refrigeration team can help you overcome these challenges.

The big story here with the refrigeration team is that we have split our group into three working groups to focus on three problems that were identified by members. That is, utility incentive programs and where they exist and where they don't, an energy metric for supermarket refrigeration, as they said these systems are complex, and an integrated business model to optimize refrigeration systems.

So, the refrigerator in your supermarket is not standalone device, and Bob Zogg at Navigant is doing a great job breaking these problems down and answering those questions in a group setting. Also want to mention upcoming Whole Foods Market alternative refrigerant case study, that's going to be very important, and Hannaford alternative refrigerant case study.

So, two very interesting processes coming out of the refrigeration team, and that pretty much wraps it up for me. For the tech teams, I just want to point out that, again, the materials referenced in here are all available on the website, you access the tech teams by clicking on the Activities section, the Activities tab, and then you can select the individual tech teams there.

When the slides go out, all those hyperlinks will be active, so you can click through to the resources referenced. So, with that, I am going to hand it over to Deb to take it from there.

Deborah Cloutier: Thanks, Andy. Much appreciate. Well, I will bring us through the home stretch of today's presentation by sharing with you some updates on the market solutions team, if we can please go to the next slide. The goal of the market solutions team is really to help you identify non-technical barriers to energy efficiency, and then for the Better Buildings Alliance to help develop and deploy these solutions to make it easier for you to implement them quickly and at scale.

So, currently the market solutions team is organized into focused areas, and these are based on feedback that we received from you and other Better Buildings Alliance members that really represent sort of pressing market needs. First, on the left-hand side we have leasing and split incentives, and that group is seeking to leverage

the tenant and landlord relationship really to accelerate energy efficiency and different mechanisms and ways to do that.

The finance and appraisal group is focused on building the business case for more and deeper investments in energy efficiency, as well as helping to ensure that energy performance is incorporated into the building's valuation and appraisal process. The workforce training group is helped to ensure that the market has skilled and qualified workforce able to respond to the growing demand for and the ability to maximize energy performance in commercial buildings.

And finally, last but not least, the data access group is working with members to develop resources, ensure best practices on how to engage with utilities to gain the access to aggregate whole building energy consumption data, which has been elusive for many of us within the retail market.

Moving onto the next slide, I want to share with you that this year in conjunction with the institute for market transformation and support from a truly exceptional steering committee of more than 20 industry practitioners, the Better Buildings Alliance successfully launched the Green Lease Leaders Recognition program, and this highlights those in the market who have successfully used the commercial lease and leasing process to create more sustainable tenant landlord relationships.

The program helps to define the term, Green Leasing, and provides certain criteria and clauses that really help foster that greater adoption of sustainable building management practices. So, landlords and tenants can apply for the recognition, they must show executed leases that meet the criteria set forth by the program as well as submitting a narrative, sort of describes the organizational approach to their leasing practices.

And at this year's building summit, we were very excited to recognize organizations representing more than 400 million square feet of commercial floor space as our inaugural group of Green Lease leaders. The 2015 application's now available, and it includes expanded requirements for the commercial brokerage, or the brokerage teams also to earn the award, and the team this year focused on developing several resources with the help of these organizations on how they went about implementing green leasing in their portfolios.

It includes things like tips for energy efficient office build outs,

sample lease language, best practices for green leasing, and with the help of the institute for market transformation, we also developed a number of case studies that profiles those winners and some of the activities that they undertook to get there.

You can find the application, additional resources, and more materials on the greenleaseleaders.com Web page, and in 2015 our group will continue to promote the Green Lease Leaders program, and specifically increase the engagement of tenants and occupiers. They have been not quite as frequently at the conversation table, and we are really seeking to further build the demand for you as owners and managers of sales space to have tenants asking for and engaging on those discussions.

Moving to the next slide, this is really focusing on the finance and appraisal aspect of market solutions, so there is increasing evidence showing the financial benefits of high-performing commercial real estate. It's seen not just to reduce operating costs, but also in improved rents, vacancy, and asset sale prices.

Yet too many investments in energy efficiency have great high returns as well as short paybacks or pass over, and the real question this team is trying to address is why. So, BBA, the Better Buildings Alliance is working to identify additional opportunities to accelerate that investment in energy efficiency as well as ways to encourage the commercial appraisal industry to recognize increased energy efficiency and energy performance during that valuation process.

So, to this end, the alliance is continuing to enhance the building asset score. For those of you that have not already checked out this tool. It uses a ten-point scale to evaluate the energy efficiency of commercial as well as residential building physical characteristics in those major energy-related systems.

The user enters in information about the building's structure, energy use, things like number of floors, lighting systems, the envelope, et cetera, and we are looking for organizations to pilot the new asset score, and if you would like to learn more about that, please reach out to your account manager, either Zach or Cara to learn about how to get engaged in that.

Additionally, we have activities underway to develop a research plan that will seek to identify those perceptions and misconceptions regarding the value of investing in energy efficiency that may be preventing your organization from more

fully dedicating capital to upgrades, so the research will further grow this body of evidence, sort of linking financial as well as operational and environmental performance.

And we are developing a training course for the commercial appraisers, specifically the course is building on the existing green training that appraisers have available to them, but will highlight the new tools such as Energy Star portfolio manager, the building asset score, and the building performance database and ways that appraiser can use those three tools to better determine the value of high-performing real estate.

And lastly related to this topic, reliance continuing to support the appraisal foundation's efforts to develop competency guidelines for commercial appraisers, and so you may have heard about this over the last year, year and a half. We are now at final exposure draft, final version hopefully, is open for public comments and comments are due back to the appraisal foundation by December 12th, so kind of short window available, but if you are interested in learning more about that please e-mail us and we will get that draft to you with how best to engage in it.

And moving to the next slide, the Better Buildings Workforce Initiative, as I had mentioned before, it's really seeking to develop this skilled and certified clean energy workforce, so as you probably know, there are numerous existing certifications available related to energy performance and commercial building operation, but they have varied and disparate requirements.

This is really resulting in kind of a lack of clear indicators in the market of who is and what is a qualified professional, so the workforce initiatives working with industry practitioners and the National Institute of Building Sciences to address this barrier, and they are working to develop voluntary national guidelines to improve quality and consistency of the workforce credentials.

So, the program's currently working with stakeholders, many folks from the Better Buildings Alliance are participating, and I anticipate that this initiative would come back around for this group and others to help drive market demand once they have finished flushing out the skills standards, the curricula and the training.

So, lastly, moving to the slide related to data access, I think for many on the phone we have been faced with a barrier of whole building monthly utility data for the purposes of benchmarking and

really acknowledging that it's hard to manage that which you aren't measuring, so the data access team has been working to inform the alliance members about an array of initiatives aimed at facilitating access to building performance data.

This includes working with many members to articulate the role that data plays in energy management efforts and specifically helping to communicate these needs to the utilities that hold access to the data as well as the cities that are often working on and passing legislation for mandatory benchmarking, and in some cases disclosure.

So, one venue in which we're focusing is the energy data accelerator. This is an offer, or a partnership really, between utilities, local governments and the Department of Energy where the city utility pairs have committed to providing whole building data to commercial building owners.

And a group of Better Building Alliance members have already gotten together and offered a letter of support and kind of really crystalizing their position statement related to the need for aggregate monthly utility data and we welcome others on the call today, either as individuals or in groups to consider emulating this approach and also working with the Retail Industry Association to come together.

I mean, we realize it's going to take a village to overcome these barriers to gaining access to aggregate data, so we welcome folks on the call to help in having a voice in this initiative, so with that, I turn it back over to you, Holly, to wrap up today's webinar.

Holly Carr: Thank you, Deb. Can everyone hear me? Can someone hear me?

Deborah Cloutier: Yes, we can.

Holly Carr: Great. Okay. Let's move to the next slide, don't hang up quite yet, although you might think you should from the Thank You slide. These are quick contact information for our team here at DoE, and our supporting staff. Feel free to reach out to any of us with questions about what you've heard today.

We have gotten a number of questions from you through the webinar, and I want to be respectful of folks' time. I recognize it's 4:00, we can stay on for a few minutes, and we can take a couple of these questions that have come in. We certainly understand if you need to jump off, but let's hop to the next slide.

This is additional contact information for the individuals heading up our technology team, as well as Deb's contact information on the market solutions side. Again, if you'd like to get involved in any of these tech teams or be involved in a tech demo, or any of the specific projects that Andy and Deb have outlined that we're working on through the Better Buildings Alliance, feel free to reach out directly and next slide, please.

All right. Questions. So, we do have a few questions that have come in from our audience members, the first one I'll send out I believe to Andy, which is, what kind of commitment will be required to join the March 2015 interior lighting campaign? This is the troffer, the lighting troffer campaign. Do you have a sense of that yet, Andy?

Andrew Mitchell: Yeah. The ILC, let me say that the commitment to participate is one that involves changing out some of your troffer lights, so the program itself is a recognition and guidance program, so if you need guidance on how to do that, or if you've done a project or are planning a project and want recognition, this is a good program for you to get involved in.

So, I would say that the commitment's pretty minimal, if you're going to do a retrofit for troffer lighting. The program is free, we welcome you to join. Does that answer the question? I hope so.

Holly Carr: I believe so, and folks should reach out to you directly at this point, or is there a specific person to touch base with outside of your *[crosstalk]*.

Andrew Mitchell: Yeah, reach out to me, and we'll be in the lighting and electric team lead, Linda Sandahl and others.

Holly Carr: Okay. And stay tuned for more information on that as the details of the program are flushed out.

Andrew Mitchell: That's right. When we launch in March of 2015.

Holly Carr: Great.

Andrew Mitchell: Thank you.

Holly Carr: Second question, just a detail question on the December 9th webinar, we had a question about whether or not you could join that without being a Better Buildings Alliance member. And the

answer to that question is, yes. We certainly welcome your participation to learn more about EMIS for retail, and we will include a direct link to registration for that webinar in the slides that we send out following this presentation.

So, anybody who's interested in that, you can join directly from the slides, and last question, Deb, if I'm a retail tenant and interested in the Green Lease Leaders program, how do I get involved. We focused on, I think, building owners and folks who own malls and have retail tenants, but as Deb clarified, we are very interested to have tenants themselves participating in negotiating with their landlords for these Green Lease clauses. So, Deb, would they reach out to you on that, or ... I'm not sure if Deb is with us, but *[crosstalk]*.

Deborah Cloutier: It helps – no, no, here you go. Sorry. It helps if I unmute my line, pardon. Yes, you can feel free to reach out to me directly and you can also go right to greenleaseleaders.com, the web address that was listed, the application is appropriate or applicable for both landlords and tenants and we would very much like to have additional tenants participating and would like to understand if there are ways in which we can help you sort of maximize your influence during the leasing process, so please feel free to reach out to me following today's webinar.

Holly Carr: Excellent. And I'm not seeing any other questions coming at this time, so I think we will finish it off. I thank you all very much for taking time out of your day to get an update on the alliance. We encourage you to send us any and all feedback on additional ways that the alliance can support you and your energy efficiency efforts. Thanks again for joining us. Have a great afternoon.

Deborah Cloutier: Thanks, Holly.

[End of Audio]